Claims

What is claimed is:

1. A compressor comprising a housing having a bore, a liner disposed on the inner wall of the housing defining the bore and having at least one slot and at least one discharge port, a first rotor mounted for rotation in the housing with its outer surface in a closely spaced relation to the inner wall of the liner, and at least one second rotor extending through the slot in the liner and intermeshing with the first rotor to compress fluid introduced between the rotors before it is discharged through the port.

2. The compressor of claim 1 further comprising a passage formed in the housing for receiving the discharged fluid from the port and passing it from the housing.

3. The compressor of claim 1 wherein the axis of the second rotor extends transverse to the axis of the first rotor.

4. The compressor of claim 1 wherein there are two second rotors disposed adjacent the respective sides of the first rotor.

5. The compressor of claim 1 wherein there are two diametrically opposed slots and two diametrically opposed ports formed through the liner.

6. The compressor of claims 1 wherein lobes are formed on the first rotor and define screw grooves for receiving the fluid.

7. The compressor of claim 6 wherein lobes are formed on the second rotor so that, as the first rotor rotates, the latter lobes enter the screw grooves to trap and compress the fluid.

8. The compressor of claim 7 wherein, as the first rotor rotates, the trapped fluid is compressed as the length and the volume of each screw groove is reduced.

9. The compressor of claim 8 wherein, upon further rotation of the first rotor, each groove passes the discharge port thus delivering the compressed fluid to the drain passage.

10. The compressor of claim 1 further comprising an additional liner having a slot and a discharge port at least one of which varies in location and/or size from the slot and discharge port of the first-mentioned liner so that the additional liner can be substituted for the first mentioned liner to change the operating characteristics of the compressor.

11. The compressor of claim 1 wherein the compressor is a screw compressor, the first rotor is a main rotor, and the second rotor is a gate rotor.

12. The compressor of claim 1 wherein the fluid is air.

13. A method for compressing fluid, the method comprising disposing a liner on the inner wall of a housing defining a bore, providing at least one slot and at least one discharge port in the liner, rotating a first rotor in the housing with its outer surface in a closely spaced relation to the inner wall of the liner, and providing at least one second rotor extending through the slot in the liner and intermeshing with the first rotor to compress fluid introduced between the rotors before it is discharged through the port.

14. The method of claim 13 further comprising forming a passage in the housing for receiving the discharged fluid from the port and passing it from the housing.

15. The method of claim 13 wherein the axis of the second rotor extends transverse to the axis of the first rotor.

16. The method of claim 13 wherein there are two second rotors disposed adjacent the respective sides of the first rotor.

17. The method of claim 13 wherein two diametrically opposed slots and two diametrically opposed ports are provided through the liner.

18. The method of claim 13 further comprising forming lobes on the first rotor that define screw grooves for receiving the fluid.

19. The method of claim 18 further comprising forming lobes on the second rotor so that, as the first rotor rotates, the latter lobes enter the screw grooves to trap and compress the fluid.

20. The method of claim 19 wherein, as the first rotor rotates, the trapped fluid is compressed as the length and the volume of each screw groove is reduced.

21. The method of claim 20 wherein, upon further rotation of the first rotor, each groove passes the discharge port thus delivering the compressed fluid to the drain passage.

22. The method of claim 13 further comprising providing an additional liner having a slot and a discharge port at least one of which varies in location and/or size from the slot and discharge port of the first-mentioned liner, and substituting the additional liner for the first-mentioned liner to change the discharge pressure and/or flow rate of the fluid.

23. A method of varying the operating conditions of a compressor having a first rotor rotating in a housing and in engagement with a second rotor so as to compress fluid introduced between the rotors, the method comprising disposing a liner between the

first rotor and the housing, providing a discharge port in the liner to receive the compressed fluid, and replacing the liner with another liner having a discharge port that varies in location and/or size from the port of the first-mentioned liner.

24. The method of claim 23 providing at least one slot in the liner for receiving at least a portion of the second rotor, the portion of the second rotor intermeshing with the first rotor.

25. The method of claim 24 wherein the other liner has a slot that varies in location and/or size from the slot of the first-mentioned liner.

26. The method of claim 25 wherein the step of replacing changes the discharge pressure and/or flow rate of the fluid.

27. The method of claim 24 wherein two diametrically opposed slots and two diametrically opposed ports are provided through the liner.

28. The method of claim 23 further comprising forming a passage in the housing for receiving the discharged fluid from the port and passing it from the housing.

29. The method of claim 23 further comprising forming lobes on the first rotor that define screw grooves for receiving the fluid.

30. The method of claim 29 further comprising forming lobes on the second rotor so that, as the first rotor rotates, the latter lobes enter the screw grooves to trap and compress the fluid.

31. The method of claim 30 wherein, as the first rotor rotates, the trapped fluid is compressed as the length and the volume of each screw groove is reduced.

32. The method of claim 31 wherein, upon further rotation of the first rotor, each groove passes the discharge port thus delivering the compressed fluid to the drain passage.